

Figure 5.2 Characteristics of Various Levels of Success for Inquiry Assessments**Advanced (Extended/Sophisticated)**

- Is able to make new generalizations from prior experience
- Successfully experiments to create multiple solution paths
- Sophisticated, complex, and detailed explanation of inquiry process and the strategies used

Proficient (Satisfactory/Adequate)

- Demonstrates good comprehension of problem situation
- Able to create a successful strategy or solution path
- Able to describe the inquiry process and strategy used

Basic (Elementary/Partial)

- Demonstrates some awareness and comprehension of problem situation
- Weak, disorganized explanation of strategy or solution path
- Incorrect or inadequate description of the inquiry process or strategy used

Novice (Beginning/Minimal)

- Demonstrates limited awareness and poor assessment of problem situation
- Inadequate and disorganized approach to problem situation
- No clear strategy or inquiry plan

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Figure 5.3 Problem-Based Learning Evaluation Rubric

Criteria	Novice = 1	Basic = 2	Proficient = 3	Advanced = 4
Research quality	Numerous inaccuracies with little if any detail	Inconsistent accuracy but some level of detail	Accurate and competent with relevant detail	Highly accurate and sophisticated with explicit detail
Strategies used	At least one acceptable strategy attempted	At least one acceptable strategy correctly applied	Several high-quality strategies applied	Numerous complex and sophisticated strategies applied
Organization of research	Confusing and clumsy organization	Simple but acceptable organization	Reflective organization demonstrates solid planning	Intuitive organization displays complex and perceptive thinking
Communication	Ineffective and vague	Superficial quality may lead to some confusion	Competent and effective communication	Precise and nuanced communication shows high level of sophistication
Comprehension	Little if any understanding demonstrated	Limited, superficial understanding demonstrated	Demonstrations of accurate and thoughtful understanding	Numerous demonstrations of profound and perceptive understandings
Collaboration	Little evidence of collaboration	Intermittent displays of collaboration	Thoughtful collaboration demonstrated	Highly effective and synergistic collaboration

Inquiry Rubric

	Beginning	Developing	Accomplished
Authenticity	The scope of the inquiry is determined mainly by the curriculum.	The students have some influence in determining the scope of the study.	The inquiry study emanates from a question, problem, issue or exploration that is significant to the disciplines, has meaning to the students and has significant influence in determining the scope of the study.
	The task/s would not likely be tackled outside a school setting.	Other adults outside the school are intrigued by the task/s and can find ways to contribute to it.	An adult at work or in the community might actually tackle the question, problem or exploration posed by the task/s.
	The inquiry study originates with and only meets programs of study expectations.	The inquiry study originates with the program of studies but provides some opportunities to extend beyond curriculum expectations.	The inquiry study originates with an issue, problem, question or exploration that provides opportunities to create or produce something that contributes to the world's knowledge.
	The task/s contain/s few roles which reflect a single perspective.	The task/s contain/s some separate roles which reflect few perspectives.	The task/s require/s a complex array of roles and diverse perspectives.

	Beginning	Developing	Accomplished
Academic Rigor	The inquiry study provides for the acquisition of factual known information.	The inquiry study facilitates the acquisition and application of a broader understanding.	The inquiry study leads students to build deep knowledge that leads to deep understanding.
	Students are required to follow clearly defined approaches to teacher-generated criteria.	Students are offered a menu of approaches organized around the problem, issue or question under study in order to meet specific learning outcomes.	Students are offered a menu of approaches organized around the problem, issue or question under study that use methods of inquiry central to the disciplines that underpin the problem, issue or question.
	The inquiry study encourages students to memorize and repeat facts.	The inquiry study encourages students to find relationships between and among concepts in more than one subject area.	The inquiry study encourages students to develop habits of mind that encourage them to ask questions of: <ul style="list-style-type: none"> • evidence (how do we know what we know?) • viewpoint (who is speaking?) • pattern and connection (what causes what?) • supposition (how might things have been different?) • why it matters (who cares?)

	Beginning	Developing	Accomplished
Assessment	All assessment is done at the end of the study.	Ongoing assessment is conducted on an informal basis and evaluation is conducted at logical midpoints in the process. Assessment is used in a limited way in guiding teacher's instructional planning.	Ongoing assessment is woven into the design of the inquiry study providing timely, descriptive feedback and utilizes a range of methods, including peer and self-evaluation. Assessment guides student learning and teacher's instructional planning.
	The study provides no opportunities for students to reflect on their learning. There are few criteria to guide the students' learning. There is little or no evidence of goal setting.	The study provides opportunities for students to reflect on their learning using clear criteria established by the teacher. Teachers help students set learning goals, establish next steps and develop effective learning strategies.	The study provides opportunities for students to reflect on their learning using clear criteria that they have helped to set. The students use these reflections to set learning goals, establish next steps and develop effective learning strategies.
	The teacher is the only adult who assesses the work.	Teacher and student self-assessment are used.	Teachers, peers, adults from outside the classroom and the student are involved in the assessment of the work.

	Beginning	Developing	Accomplished
Beyond the School	The study involves a teacher-structured problem framed directly from stated curriculum outcomes.	Students help develop or contribute to defining a relevant question, exploration, problem or issue for study that relates to the world outside the school.	The inquiry requires students to address a semi-structured question, exploration, issue or problem, relevant to curriculum outcomes, but grounded in the life and work beyond the school.
	All parameters of the inquiry (e.g. outcomes, due dates, and expectations) are established by the teacher prior to commencement of the inquiry.	Parameters and desired outcomes of the inquiry are set by the teacher. Milestones and organizational strategies are provided for student self-monitoring.	The study requires students to develop organizational and self-management skills in order to complete the study.
	The inquiry requires mainly individual effort, with little ongoing feedback on performance; the expectation for completion is handing it in.	Teacher presents the study and students choose group members and topics from a menu of choices. The task could be completed independently, but this is not encouraged.	The study leads students to acquire and use competencies expected in high performance work organizations (e.g. teamwork, problem solving, communications, decision-making, project management).

	Beginning	Developing	Accomplished
Appropriate Use of Technology	Technology is used for the sake of using technology, not because it will enhance the inquiry. The technology is not needed to accomplish the task.	Technology has some relevance to the inquiry. The technology is somewhat needed to accomplish the task.	Technology is used in a purposeful manner that demonstrates an appreciation of new ways of thinking and doing. The technology is essential in accomplishing the task.
	Teacher decides which technologies will be used.	Students and teachers collaboratively decide which technologies will be used.	The study requires students to determine which technologies are most appropriate to the task.
	The major focus is on developing skill and fluency with software applications.	The study requires students to conduct research, share information, make decisions, solve problems, create meaning and communicate, mainly inside the classroom.	The study requires students to conduct research, share information, make decisions, solve problems, create meaning and communicate with various audiences inside and outside the classroom.
	The ongoing inquiry study is not available online.	Students have ongoing, online access to the study as it develops.	Students, parents and the larger community have ongoing, online access to the study as it develops.
	The study requires use of word processing or simple presentation software.	The study permits the use of a wider variety of technology choices.	The study requires sophisticated use of multimedia/hypermedia software, video, videoconferencing, simulation, dynamic geometry, databases and/or programming.

	Beginning	Developing	Accomplished
Active Exploration	The study can be completed in a limited amount of time, in a few areas, with teacher-generated tasks.	The study requires increased time and variety of tasks spent on exploration.	The inquiry requires students to spend significant amounts of time doing field work, labs, interviews, studio work, construction, etc.
	The study requires students to complete a series of teacher-constructed activities using limited resources.	The study requires students to engage in a basic investigation using a variety of sources.	The study requires students to engage in real (authentic) investigations using a variety of media, methods and sources.
	The study requires students to communicate what they are learning with a presentation to teacher audience (i.e. handing in as an assignment).	The study requires students to communicate what they are learning in a presentation to the classroom audience.	The study requires students to communicate what they are learning with a variety of audiences through presentation or exhibition.

	Beginning	Developing	Accomplished
Connecting with Expertise	Students hear or read about relevant information only from the teacher, or through resources provided by the teacher.	The study involves speakers or interviews with experts outside the classroom.	The study requires students to observe and interact with adults with relevant expertise and experience in a variety of situations.
	Students have limited or no access to experts.	Guest speakers, other teachers, older students or other adults are available in a limited, perhaps one-time way.	The study requires students to work closely with and get to know at least one adult other than their teacher.
	The teacher designs the task in isolation (without input from external expertise).	The teacher designs the task in consultation with experts, either directly or indirectly regarding the topic for inquiry.	The teacher designs the task in collaboration with experts, either directly or indirectly. The inquiry requires adults to collaborate with one another and with students on the design and assessment of the inquiry work.

	Beginning	Developing	Accomplished
Elaborated Communication	Students have little or no opportunity to discuss their work with others.	The task provides opportunities for students to share their ideas with each other. Opportunities to respond to each other's ideas may be limited.	Students have extended opportunities to support, challenge and respond to each other's ideas as they negotiate a collective understanding of relevant concepts. Students have opportunities to negotiate the flow of conversation within small and large group discussions.
	The task dictates the form of expression that students may use. Students have little opportunity to reflect on how the selected medium enhances their message.	Students have limited opportunities to choose forms of expression and to reflect on what media would best communicate their message.	Students have opportunities to choose forms of expression appropriate to the task (e.g. Powerpoint, iMovie, tableau, mime, puppet show, readers' theatre, drum solo, interpretative dance, artwork, debate, etc.) and to reflect on the impact of their choices.
	The inquiry requires students to communicate what they are learning to a teacher audience (e.g. handing it in as an assignment).	The inquiry requires students to communicate what they are learning with a classroom audience.	The inquiry provides opportunities for students to communicate what they are learning with a variety of audiences.

Rubric for Project Design *

	LACKS ESSENTIAL FEATURES OF EFFECTIVE PBL <i>The project has one or more of the following problems in each area:</i>	NEEDS FURTHER DEVELOPMENT <i>The project has essential PBL features but has some of the following weaknesses:</i>	INCORPORATES BEST PBL PRACTICES <i>The project has the following strengths:</i>
Overall Idea - Focused, in-depth, extended inquiry - Authentic Work	<ul style="list-style-type: none"> - The "project" is more like an activity or applied learning task, rather than an extended inquiry. - The "project" is unfocused, more like a unit with several tasks than one project. - The topic and/or Driving Question (DQ) do not reflect authentic issues or challenges that concern students, their communities, and/or professionals in the field. - Tasks & products do not resemble the kind of work done in the world outside of the classroom. 	<ul style="list-style-type: none"> • Inquiry is superficial, e.g., information-gathering is the main task. • Inquiry focuses on only one too-narrow topic, OR it tries to include too many issues, side topics, or tasks. • The topic & Driving Question (DQ) do not completely reflect authentic issues or challenges that concern students, their communities, and/or professionals in the field. • Tasks & products resemble (rather than replicate) the kind of work done in the world outside of the classroom. 	<ul style="list-style-type: none"> + Inquiry is academically rigorous: students pose questions, gather & interpret data, ask further questions, and develop & evaluate solutions or build evidence for answers. + The topic & Driving Question (DQ) reflect authentic issues or challenges that concern students, their communities, and/or professionals in the field. + Tasks & products replicate (rather than resemble) the kind of work done in the world outside of the classroom, or are actually used for a real purpose beyond the classroom.
Student Voice & Choice, Independence	<ul style="list-style-type: none"> - Students are not given opportunities, if appropriate, to express "voice & choice" (i.e., to make decisions affecting the content or conduct of the project). - Students are expected to work too much on their own, without adequate guidance from the teacher and/or before they are capable. 	<ul style="list-style-type: none"> • Students are given limited opportunities to express "voice & choice," generally with less important matters, e.g., deciding how to divide tasks within a team or which website to use for research. • Students are expected to work independently from the teacher to some extent, although they have the skills and desire to do even more on their own. 	<ul style="list-style-type: none"> + Students have opportunities to express "voice & choice" on important matters, e.g., the topics to study, questions asked, texts & resources used, products created, use of time, and organization of tasks. + Students have opportunities to take significant responsibility and work independently from the teacher.
Driving Question	<ul style="list-style-type: none"> - There is no DQ. - The DQ is seriously flawed, e.g.: <ul style="list-style-type: none"> o It has a single or simple answer. o It is not engaging to students, e.g., it sounds too "academic," like it came from a textbook or appeals only to a teacher. 	<ul style="list-style-type: none"> • The DQ relates to the project but does not capture its main focus; it may be more like a theme. • The DQ meets some criteria for an effective DQ, but lacks others, e.g., it may lead students toward one particular answer, or it may be hard to answer thoroughly with the resources & time available and/or by students in this class. 	<ul style="list-style-type: none"> + The DQ captures the main focus of the project. + The DQ is open-ended; it will allow students to develop more than one reasonable, complex answer. + The DQ is understandable & inspiring to students. + To answer the DQ, students will need to gain the intended knowledge, skills, & understanding.

<p>Interdisciplinary Features (If Applicable)</p>	<ul style="list-style-type: none"> - The project is more like "parallel teaching" with the same theme but with different products in each subject. 	<ul style="list-style-type: none"> • Different content areas make simplistic and/or limited contributions to the overall project (e.g., the math teacher helps with calculations or the English teacher helps with writing). • In some subjects the project may not focus on key standards of the discipline. 	<ul style="list-style-type: none"> + Each content area makes substantive contributions to the project, e.g., the products students create require the integration of knowledge & skills from different disciplines. + Teachers of different subjects use the project to teach important parts of their curriculum. + If the project is centered around one subject, it is because other subjects plan to take turns being the major substantive focus of various projects.
<p>Content Outcomes</p>	<ul style="list-style-type: none"> - Content outcomes are not specified. - Content outcomes are not aligned with national, state, or district standards. 	<ul style="list-style-type: none"> • There are too few OR too many content outcomes • The project emphasizes additional standards that students do not need to know to complete project tasks. 	<ul style="list-style-type: none"> + Specific content outcomes are aligned with key national, state, or district standards, and represent essential skills and understandings needed to successfully complete the project.
<p>21st Century Skills</p> <p>- Collaboration</p> <p>- Presentation & Defense</p> <p>- Critical Thinking</p> <p>- Technology</p>	<ul style="list-style-type: none"> - The development of 21st Century Skills is not included. - It is assumed that some 21st Century Skills will be gained by students, but the project does not explicitly scaffold the development of these skills. - Students do all project tasks as individuals. - Students do not present or defend their culminating product(s). - Students are not asked to think critically or solve problems. - Technology is not used, or is used inappropriately, e.g.: <ul style="list-style-type: none"> o It distracts or is unnecessary. o It takes too much time away from gaining other skills & key content knowledge. 	<ul style="list-style-type: none"> • Too few or relatively unimportant 21st Century Skills are targeted, OR too many to be adequately taught & assessed. • The project scaffolds the development of 21st Century Skills to some extent, but there may not be adequate opportunities to build skills or rigorously assess them. • Students work in teams, but it may be more cooperative than collaborative, e.g. the work of individuals is pieced together. • Students present their culminating products, but their defense is limited to a short, superficial question/answer session. • Students are asked to analyze & solve problems and think critically, but not in depth or in a sustained way. • Some technology is used, but more could be added to build engagement & skills and improve the quality of student work. 	<ul style="list-style-type: none"> + A limited number of important 21st century skills are targeted to be taught & assessed. + There are adequate opportunities to build 21st Century Skills and they are rigorously assessed, e.g., with a rubric and feedback. + Students work in collaborative teams that employ the skills of all group members when completing project tasks. + Students may collaborate with people beyond the classroom. + Students present culminating products and defend them in detail & in depth, e.g. by explaining reasoning behind choices they made, their inquiry process, etc. + Students are asked to analyze & solve problems and think critically, in depth and in a sustained way. + Technology enhances the project in especially creative ways and/or in ways that greatly improve the quality of student skills, engagement, and work.

Major/Culminating Product(s) and Presentation Audience	<ul style="list-style-type: none"> - No major/culminating products are included, only a series of smaller assignments. - The major products are not aligned with the Driving Question, i.e., they do not answer it or solve the stated problem. - Students do not present or exhibit their work to an audience. 	<ul style="list-style-type: none"> • Major/culminating products address the Driving Question, but do not align closely enough with standards & other outcomes (i.e., will not provide adequate evidence of learning). • Students are asked to create products that are mainly replications of others' work, e.g., a report of information or an artifact based on a model. • The audience for student presentations is limited to classmates & the teacher. 	<ul style="list-style-type: none"> + Major/culminating products provide an answer to the Driving Question and align with standards & other outcomes. + Major/culminating products require innovation; students create something new, e.g., a written product, piece of media or art, or their own presentation after analysis of information or synthesis of ideas. + Students present or exhibit their work to an audience that includes other people from both within and outside the school, which may include online audiences.
Entry Event	<ul style="list-style-type: none"> - No entry event is planned. - Day one of the project will feel like any other day (or worse, because it seems like more work than usual). 	<ul style="list-style-type: none"> • The entry event will gain student attention but it will not begin the inquiry process by creating a "need to know" or generate questions about the topic of the project. 	<ul style="list-style-type: none"> + The entry event will powerfully engage students, both emotionally & intellectually (i.e., make them feel invested in the project & provoke inquiry).
Formative Assessment	<ul style="list-style-type: none"> - The project has no formative assessment to monitor student learning prior to the submission of final products. 	<ul style="list-style-type: none"> • Assessments are not used often enough to identify student learning needs or difficulties with project work. • Assessments do not cover all essential content & skills. 	<ul style="list-style-type: none"> + Assessments frequently monitor student learning of important content & skills and student work on project tasks, so the teacher can improve instruction. + Assessments provide information to students so they can create high-quality products through critique & revision.
Summative Assessment	<ul style="list-style-type: none"> - No summative assessments are planned. - There are no summative assessments of individual student learning; e.g., all grades are determined by team-created products. - Expectations about the quality of work required are not communicated to students through rubrics and other methods. 	<ul style="list-style-type: none"> • Summative assessment focuses on only one major product. • Expectations about the quality of work required are not clearly communicated to students, e.g., rubrics are unclear or incomplete. 	<ul style="list-style-type: none"> + Summative assessment focuses on both team-created products and individual learning, with the proper weight for each. + Summative assessment targets all important content & skill outcomes. + Expectations about the quality of work required are communicated to students through rubrics and other devices. + Rubrics are complete and of high quality. + Product exemplars are created or found, to illustrate the quality of expected work.
Duration	<ul style="list-style-type: none"> - Time frame is too short to accomplish project tasks. - The project is too long to justify what is gained. 	<ul style="list-style-type: none"> • Time frame may be overly optimistic about how quickly some tasks can be done. • The project is too stretched-out; students become disengaged or unfocused. 	<ul style="list-style-type: none"> + The project is long enough to adequately answer the Driving Question and complete high-quality work, including time for revision, presentation, and reflection.

* NOTE: This rubric may be used when a project is being planned, to fine-tune its design, or after it is conducted, as a design review. Use BIE's forthcoming **Project Implementation Rubric** after the project to assess outcomes and the quality of implementation, including the degree to which learning goals were met and students were engaged, and how well time was used, teams were managed, lessons and other scaffolding were provided, and an effective classroom culture was developed.

General Inquiry Rubric

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	Research	Product	Discussion/Sharing	Use of Time
Accomplished	Initiates high-level inquiry by formulating probing questions, identifying the needed information, locating, examining, and analyzing various resources, and creating complete source citations	Demonstrates thorough understanding of topic, the ability to make numerous connections, and is a powerful, high quality aid to share learning	Well prepared and demonstrates a strong desire to share learning with others Detail on Discussion Rubric	All time used wisely, extra time is used to extend and expand inquiry into additional areas
Proficient	Initiates inquiry, by formulating probing questions, identifying the needed information, locating and examining resources, and creating complete source citations	Demonstrates understanding of topic, the ability to make connections, and serves as a meaningful high quality, aid to share learning	Prepared and demonstrates a desire to share learning with others Detail on Discussion Rubric	All time used wisely
Amateur	Initiates inquiry by formulating probing questions, locating, and using resources, and creating source citations	Demonstrates new learning, the ability to make basic connections, and serves as an aid to share new learning	Not fully prepared, shares some learning with others Detail on Discussion Rubric	Most time used wisely
Beginner	Initiates basic inquiry identifies, uses, and cites sources with assistance	Demonstrates basic learning	Unprepared, attempts to share learning with others Detail on Discussion Rubric	Some time used wisely